REMARKS

1. Several corrections, including those required by the Examiner, for the Specification has been made.

2. Since a division or continuation-in-part application does not require a terminal disclaimer, the applicant has retracted and withdrawn the "Terminal Disclaimer to Obviate a Provisional Double Patenting Rejection over a Pending Second Application" filed with the application, and apologizes for any inconvenience this might cause.

3. The objections and rejections for the claims 1-29, as well as all the references kindly provided by the Examiner have been respectfully studied and considered.

4. An additional information disclosure statement and the required fee have been included.

5. All claims (claims 1-29) have been canceled.

6. Three new independent claims 30, 48 and 50, and twenty-four new dependent claims 31-47, 49 and 51-56 have been added to better and more clearly define the invention.

7. Claim 30 teaches a convenient and extremely fast method to brew a cup of high quality coffee without the use of expensive coffee machines. Unlike the prior art methods discussed below, the present invention brews a strong cup of coffee in about 5 to 60 seconds, typically about 20 to 30 seconds from the time water is poured into the extraction chamber to the time a reservoir of brewed coffee is ready for drinking. Such fast brewing time is enabled by the freely movable dispersion of the roasted coffee grounds and the swirling-based conversion process that can rapidly converts a reservoir of water in the exchange chamber adjacent a sufficiently large extraction chamber to a reservoir of brewed coffee. It is also believed that because the roasted coffee grounds in the extraction chamber float as a plug of highly concentrated dispersion containing concentrated flavor adjacent the exchange chamber, the swirling-based conversion process quickly transports the concentrated flavor in the plug into the reservoir of water in the exchange chamber. Such rapid transport of the concentrated flavor quickly converts the reservoir of water into a reservoir of strong coffee, therefore effectively reducing the brewing time needed.

   One of the prior art methods relates to the well-known tea bags. As taught by Clausi in Pat. No. 5,135,764 (column 3, lines 29-41) and Raffaele in Pat. No. 5,358,724 (column 1, lines 41-55), such tea bag method does not provide acceptable brew strength or extraction rate and results in messy dripping bags to dispose. To overcome these problems, Raffaele [Pat. No. 5,358,724] taught to use a

string 12 for compressing the infusion bag 10 to improve extraction of flavor (column 2, lines 42-59 and column 4, lines 26-31). Dawson [GB 2,174,890 A] taught a retaining means for constraining a tea-bag 15 or tea leaves to the base of cup to solve the messy dripping bag problem, and taught to push the domed shell 9 of the retaining means to the base and to compress the tea bag or tea leaves to improve the extraction (column 2, lines 2-11). Pozar [Pat. No. 5,335,591] taught to use a tea bag squeezer to squeeze the tea bag repeatedly to improve extraction (column 3, lines 19-29). The methods taught by Raffaele, Dawson and Pozar, however, have several drawbacks. First, they may work well for tea bag or tea leaves, whose volume expands nearly one hundred percent in hot water and can therefore be readily compressed or pressed, but may make unacceptably weak coffee because coffee grounds do not expand much in water and thus can not be compressed or squeezed as easily as tea leaves. Second, these methods require a consumer to use sufficient force to compress, press or squeeze the tea bag or leaves, which may be difficult for those who have weak or shaking hands due to illness such as Parkinson's disease. Third, the methods by Dawson and Pozar require the availability of specific tools to push or squeeze the tea bags, which may be inconvenient to some consumers. The present invention has overcome the first drawback (i.e. weak coffee) of Raffaele, Dawson and Pozar's methods through both the freely movable dispersion and the swirling-based conversion process that converts a reservoir of water to a reservoir of strong coffee in seconds. The second and third drawbacks have been overcome naturally since the present invention requires neither force to compress, push or squeeze nor specific tool to push or press. This also makes the present invention even more convenient than the methods taught by Raffaele, Dawson and Pozar. In addition, Raffaele, Dawson and Pozar had not taught a freely movable dispersion or a swirling-based conversion process to convert a reservoir of water to a reservoir of brewed coffee.

Another of the prior art methods relates to gravity filtration of coffee grounds. Erickson et al [Pat. No. 5,243,164] taught a method to brew coffee by positioning a drip coffeemaker 10 above a cup 64 and allowing the microwave heated water in reservoir 14 to seep through the coffee grounds on a filter 16 (column 7, lines 33-50) into the cup. Debacker [Pat. No. 5,806,408] taught a lid 28 having a side wall 30 and groove 32 for securing the lid to container 14 and a collapsible liquid permeable pouch 40 (which functions as brew basket) attached to the lid for containing brewing substance 42 (column 3, lines 1-53) and taught a method to brew coffee by immersing pouch 40 and brewing substance 42 in cup 14 for a sufficient time and then pulling the pouch up towards the lid to expel and filter the extraction in the pouch into the cup (column 5, lines 1-28). Abdenour [Pat. No. 4,487,114] taught a brew basket 12 that also functions as a lid for a cup 16 and is partly received in the cup (column 2, lines 57-63) and a method to brew coffee by allowing hot water to enter the brew basket containing

coffee grounds and allowing coffee to drip through the filter paper to the cup below (column 5, lines 42-57). One well-known drawback with the gravity filtration method in general is the long brewing or extraction time. Another drawback is the inconvenience associated with the filtration process. Another drawback for the methods taught by Erickson et al, Debacker and Abdenour in particular is the complexity of the devices required to perform the method, which makes it too expensive and complex for some consumers. The method according to the present invention is very fast and requires only a simple device, therefore do not have any of the drawbacks associated with the method taught by Erickson et al, Debacker and Abdenour.

Another of the prior art methods relates to tilting-caused filtration of coffee grounds. Welker [Pat. No. 5,168,140] taught a method to brew coffee by placing a charge 16 (i.e. water and coffee grounds) into the cup, applying lid 14 onto the cup, heating the charge in a microwave oven, and tilting the cup to generate a liquid head to cause beverage to filter through the filter screen 42 (column 3, lines 52-60; column 4, lines 3-16). Calagui [Pat. No. 6,263,781] taught a method to brew coffee by placing tea leaves 30 into cup 12, setting a filter insert 14 into the cup, pouring hot water into the cup to mix with the tea leaves to produce a beverage, and tilting the cup 12 to cause beverage 32 to filter through the filter insert 14 (column 3, lines 63-67 and column 4, lines 1-24). One major drawback with the methods taught by Welker and Calagui is that when a consumer tilts the cup to take the first sip, because of the filter and of the liquid surface tension the beverage is slow or hesitant to flow out of the filter. As a natural reaction, she may tilt or tip the cup a lot more to get more drink, which can cause the hot beverage in the cup to gush out to her mouth and face and potentially burn her, thus posing a potential safety issue. A minor drawback with both the Welker and Calagui's methods is that people are used to being able to see the coffee or tea in the cup before they drink. Because of the filter screen 42 and filter insert 14 people would not be able to see the beverage brewed by Welker and Calagui's methods before drinking, which may make them uncomfortable or unsure about when or whether the beverage is ready to drink. The present invention has solved the major drawback or the safety issue by first forming a reservoir of water and later converting the reservoir of water to a reservoir of coffee free of coffee grounds. Since the coffee in this reservoir of coffee does not need to pass through the filter, it will flow naturally when one takes the first sip, thus preventing the potential safety issue. By having this reservoir of coffee above the filter, consumers would be able to see the more appealing coffee rather than the filter, thus resolving the minor drawback. In addition, Welker and Calagui had not taught an exchange chamber, had not taught to form a reservoir of water in the exchange chamber, and had not taught to convert the reservoir of water to a reservoir of brewed coffee.

In summary, the method according to the present invention has resolved most of the drawbacks associated with the prior art method related to tea-bags as taught by Raffaele, Dawson and Pozar, the prior art method related to gravity filtration as taught by Erickson et al, Debacker and Abdenour and the prior art method related to tilting-caused filtration as taught by Welker and Calagui.

To help advance prosecution, some of the support for this claim may be found in Page 12, lines 30-34; Page 13, lines 1-34; Page 14, lines 1-20; and Figs. 8 and 8a of the application.

8. Claims 31 - 47 are dependable claims of claim 30.

Claim 31 further teaches the sequence of performing the steps in the method. Support for this claim may be found in Page 14, lines 14-15 and Figs. 8 and 8a of the application.

Claim 32 further teaches a shorter duration for the converting step. Support for this claim may be found in Page 14, lines 15-17 and Figs. 8 and 8a of the application.

Claim 33 further teaches forming a visually appealing layer of crema on the reservoir of brewed drink by swirling or shaking the container. The coffee crema layer is a sign for high quality and best-brewed coffee, and normally can only be generated by high pressure espresso machines. Support for this claim may be found in page 13, lines 30-35; page 14, line 1 and lines 15-17; and Fig. 8a of the application.

Claim 34 is also a dependent claim of claim 33. It further teaches a specific filter used to enable the swirling or shaking of the container to generate a visually appealing layer of crema on the top of the reservoir of brewed drink. A filter with too small pores, such as the paper filter for the popular automatic drip coffeemakers, will prevent the crema layer from forming. Support for this claim may be found in page 13, lines 30-35; page 14, lines 15-17; and Fig. 8a of the application.

Claim 35 is also a dependent claim of claim 33. It further teaches a specific filter used to enable the swirling or shaking of the container to generate a visually appealing layer of crema on the top of the reservoir of brewed drink. A filter with too tortuous pores such as a paper filter will cause a thinner crema layer or even prevent the crema layer from forming. Support for this claim may be found in page 13, lines 30-35; page 14, line 1 and lines 15-17; and Fig. 8a of the application.

Claim 36 further teaches about the relationship between the exchange chamber and the sufficiently large extraction chamber and between the reservoir of water and the freely movable dispersion. The

taught relationship allows the reservoir of water to be above the freely movable dispersion, thereby allowing a plug of roasted coffee grounds that floats in the dispersion to be adjacent to the reservoir of water. It is believed that the plug of roasted coffee grounds is actually a plug of highly concentrated dispersion, and contains very concentrated flavor. The swirling step transports the concentrated flavor in the plug into the reservoir of water in the exchange chamber and quickly converts the reservoir of water into a reservoir of strong coffee, therefore effectively reducing the brewing time needed. Support for this claim may be found in page 6, lines 32-33; page 13, lines 1-2; page 14, lines 3-4 and 14-17; and Figs. 8 and 8a of the application.

Claim 37 further teaches about the size of the extraction chamber. Support for this claim may be found in page 13, lines 6-8; and Fig. 8 of the application.

Claim 38 further teaches about the size of the extraction chamber. Support for this claim may be found in page 13, lines 6-11; and Fig. 8 of the application.

Claim 39 further teaches about the size of the exchange chamber and extraction chamber. Support for this claim may be found in Figs. 8 and 8a of the application.

Claim 40 further teaches a step to utilize the reservoir of brewed drink in the exchange chamber. This reservoir of drink is outside the filter and does not pass through the filter when being drunk. As a result, it can flow naturally (without any resistance from the filter) during drinking and helps provide a more pleasant experience when a consumer takes her first sip. Support for this claim may be found in page 14, lines 17-18; and Fig. 8a of the application.

Claim 41 further teaches a step to filter the dispersion in the extraction chamber. Support for this claim may be found in page 14, lines 18-20 of the application.

Claim 42 is also a dependent claim of claims 40 and 41, and further teaches a vent to facilitate the filtration of the dispersion. Support for this claim may be found in page 14, lines 7-12 of the application.

Claim 43 further teaches a disposable brewing cup and a step to remove a cover seal from the cup, a step to place additive to the exchange chamber before the forming steps and a step of discarding the container after consumption of the brewed drink. Because the filter prevents one from stirring the drink with a spoon or the like as one normally does, it is important to place additive to the exchange chamber before the forming steps so that the water poured during the forming steps can carry the

additive into the extraction chamber. Support for this claim may be found in page 10, lines 24-27; page 12, lines 30-35; page 13, lines 1-10; page 20, 10-14; and Figs. 8 and 8a of the application.

Claim 44 further teaches a disposable brewing cup and a step to remove a cover seal from the cup before the forming steps, a step to place a lid or cover to the container and above the exchange chamber before the converting step, and a step to discard the container after consumption of the drink. By placing the lid on the container, the spluttering of the reservoir of water in the exchange chamber will be reduced during the converting step. Support for this claim may be found in page 10, lines 24-27; page 12, lines 30-35; page 13, lines 1-10; page 15, 15-17 of the application.

Claim 45 further teaches a step to quench the extraction of the coffee grounds to prevent the undesired bitter chemicals from being extracted, thus improving the taste of the brewed drink. It is well known in the art that the undesired bitter chemicals takes longer to be extracted than the flavor components and the over-extraction of the coffee grounds would impose undesired bitter taste to the coffee. Pastrick [Pat. No. RE. 34,482] taught to make tea by pulsing hot water into a brewing chamber 120 in which tea leaves are steeped by hot water and by allowing the tea to overflow port 126 and drop into a receptacle 28 that contains ice to cool tea (column 6, lines 38-57). Pastrick taught to use ice to cool the brewed tea, but had neither taught to add ice to the tea leaves in the brewing chamber 120 nor suggested to use ice to quench the extraction of tea leaves or coffee grounds. The currently known method to solve the over-extraction problem of the coffee grounds is to reduce the extraction time to about 30 seconds, which has been practiced in most expensive espresso machines. It has not been known to solve the over-extraction problem by quenching the extraction of the coffee grounds with ice. Support for this claim may be found in page 2, lines 14-17; page 16, lines 9-12; page 15, lines 18-22; and Figs. 9 and 10 of the application.

Claim 46 further teaches to form the exchange chamber to enable the reservoir of brewed drink to cover the filter, therefore making the reservoir of brewed drink visible but the filter invisible. Because the filter and the clumps of dark coffee grounds are not visually appealing or appetizing to look at when one takes a drink from the cup, this arrangement will make the drinking experience not only more convenient but also more pleasant. Support for this claim may be found in Figs. 8a of the application.

Claim 47 further teaches that at least part of the filter is sufficiently hydrophobic to stay sufficiently dry, thereby allowing air to pass through the filter. Support for this claim may be found in page 8, lines 33-34 and page 9, lines 6-12 of the application.

9. Claim 48 teaches a method to brew a cup of high quality coffee and to prevent over-extraction of the coffee grounds, thus improving the taste of the brewed coffee. It is well known in the art that the undesired bitter chemicals in the coffee grounds takes longer to be extracted than the flavor components and the over-extraction of the coffee grounds would impose undesired bitter taste to the coffee. The present invention resolves the over-extraction problem by quenching the extraction with ice added directly to the coffee grounds after a brief period of contact between the coffee grounds and hot water, thereby preventing the undesired bitter chemicals from being extracted. An unexpected benefit, which is not disclosed in the application, of quenching the extraction of the coffee grounds is that the coffee filtration flow is significantly increased after the quenching step. Pastrick [Pat. No. RE. 34,482] taught to make tea by pulsing hot water into a brewing chamber 120 in which tea leaves are steeped by hot water and by allowing the tea to overflow port 126 and drop into a receptacle 28 that contains ice to cool tea (column 6, lines 38-57). Although Pastrick taught to use ice to cool the brewed tea in the receptacle 28, he had neither taught to add ice to the tea leaves in the brewing chamber 120 nor suggested to quench the extraction of tea leaves or coffee grounds by ice in the brewing chamber 120. The currently known method to solve the over-extraction problem of the coffee grounds is to reduce the extraction time to about 30 seconds, which has been practiced in most expensive espresso machines. It has not been known to solve the over-extraction problem by quenching the extraction of the coffee grounds with ice. Support for this claim may be found in page 2, lines 14-17; page 15, lines 18-22; page 16, lines 9-12; and Figs. 9 and 10 of the application.

10. Claims 49 is a dependable claim of claim 48.

    Claim 49 further teaches adding a predetermined amount of cold liquid to the dispersion at a predetermined time after the introducing hot water. The cold liquid brings the temperature of the roasted coffee grounds down more quickly to slow down the extraction than the ice does. The cold liquid also helps increasing the volume of the brewed drink while reducing the amount of ice needed to quench the extraction of the coffee grounds. Support for this claim may be found in Page 15, lines 13-15 and Page 16, lines 15-16 of the application.

11. Claim 50 teaches a method to enhance the flow of coffee through a filter when one tips or tilts a cup to take a drink, thus improving the drinking experience. When a person takes a drink from a cup, they expect the coffee to flow naturally and quickly into her mouth. As known in drip coffeemakers, coffee grounds and filters impose significant resistance to the coffee flow. As a result, it is slow for coffee to drip through the filter to make a cup of coffee. Welker in Pat. No. 5,168,140 (column 3,

lines 52-60; column 4, lines 3-16) and Calagui in Pat. No. 6,263,781 (column 3, lines 63-67 and column 4, lines 1-24) taught a method to brew coffee by introducing coffee grounds (or tea) and water into a cup, applying the filter to the cup, and tilting the cup to cause the coffee to pass through the filter to take a drink. A first drawback with Welker and Calagui's method relates to the drinking experience. Due to the flow resistance of the filter and coffee grounds, a consumer may have to wait to take a drink when she tilts the cup, which would make the drinking experience unpleasant. A second drawback is that the method may work well with tea leaves and coarse coffee grounds, it does not work with finer coffee grounds because the fine coffee grounds would essentially stop the filtration flow. The coarse coffee grounds, however, require longer extraction time and produce weaker coffee. The present invention teaches to facilitate the filtration flow by swirling the container for a predetermined amount of time before one takes a drink. By swirling the container for a predetermined period of time, e.g. fifteen seconds, the filtration flow is increased dramatically so that coffee can flow quickly and naturally when she tilts the cup to takes a drink, thereby improving her drinking experience. The swirling also causes the coffee grounds to quickly sink to the bottom of the cup. As a result, the method according to the present invention can use finer coffee grounds, therefore enabling faster brewing time and stronger coffee. In addition, Although Welker and Calagui had taught to tilt or tip a cup to take a drink, the normal tilting or tipping, which is slight and slow, that occurs when one takes a drink can neither increase the filtration flow to solve the unpleasant drinking experience drawback nor enable the use of fine coffee grounds to solve the long extraction time and weak brew drawback. Particularly, Welker and Calagui had neither recognized the unpleasant drinking experience and the long extraction time/weak brew drawbacks nor provided any solutions to the drawbacks. More particularly, Welker and Calagui had not taught to swirl or shake the cup to solve the unpleasant drinking experience and the long extraction time/weak brew drawbacks before tilting the cup to take a drink. Support for this claim may be found in page 10, lines 20-31; page 11, lines 15-17; and Fig. 5 of the application.

12. Claims 51 - 56 are dependable claims of claim 50.

Claim 51 further teaches forming a visually appealing layer of crema on the brewed drink by the swirling or shaking the container. The coffee crema layer is a sign for high quality and best-brewed coffee, and normally can only be generated by high pressure espresso machines. Support for this claim may be found in page 13, lines 30-35; page 14, line 1 and lines 15-17; and Fig. 8a of the application.

Claim 52 is also a dependent claim of claim 50, and further teaches to display the coffee crema layer with a transparent filter. Support for this claim may be found in Page 5, lines 4-8 of the application.

Claim 53 further teaches to prevent the hot water from overflowing the cup during the introducing step by using a filter has 350 or fewer holes per inch. Filters with any more holes per inch would cause hot water overflow out of the cup when hot water is poured onto the filter. Support for this claim may be found in Page 11, lines 9-14 of the application.

Claim 54 further teaches to prevent the hot water from overflowing the cup during the introducing step by using a filter has 200 or fewer holes per inch. Filters with more holes per inch are more prone to hot water overflow out of the cup when hot water is poured onto the filter. Support for this claim may be found in Page 11, lines 9-14 of the application.

Claim 55 further teaches to prevent hot water from overflowing the cup during the introducing step by pouring the hot water onto a fixed spot on the filter. Support for this claim may be found in Page 11, lines 9-14 of the application.

Claim 56 further teaches that at least part of the filter is sufficiently hydrophobic to stay sufficiently dry after contact with water, thereby allowing air to pass through the filter. Support for this claim may be found in page 8, lines 33-34 and page 9, lines 6-12 of the application.

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Sincerely yours,

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Applicant